



Space Launch System The Future of Exploration

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[Degree(s) from A.U.: Aerospace
Engineering]

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1989





How I Got Here From AU College of Engineering





STEM Movie with college students and young engineers, etc.



A Deeper Purpose, A Bolder Mission



“To reach for new heights...

and reveal the unknown so that what we do
and learn will benefit all humankind.”



SLS is the first step in the **journey to Mars**



Going to Mars will be difficult.
SLS provides the power that it takes.



Earth-Sun Libration Points

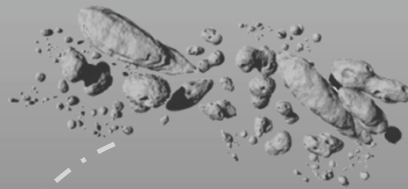
Serviceable Large Diameter Telescopes



Asteroids

Human missions

Robotic missions with sample return



Mars, Phobos, Deimos

Human missions

Single-launch robotic sample return



Deep Space/Planetary

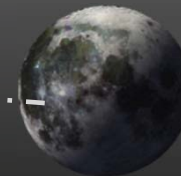
Robotic sample return missions

Reduced flight time (years)



Earth-Moon Libration Points

Way station



Commercial Space Stations

Large diameter
Single launch

Moon

Large-scale robotic precursor missions
Human settlement with resource utilization

#SLSInspires

www.nasa.gov/sls



NASA's Space Launch System

Orion:

Carrying astronauts into deep space

Core Stage:

Newly developed for SLS, the Core Stage towers more than 200 feet tall

RS-25 Engines:

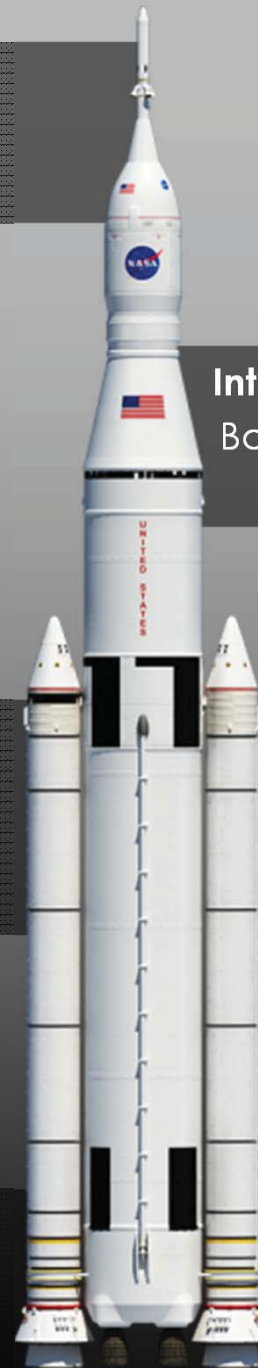
16 Space Shuttle engines are already in inventory

Interim Cryogenic Propulsion Stage:

Based on the Delta IV Heavy upper stage; the power to leave Earth

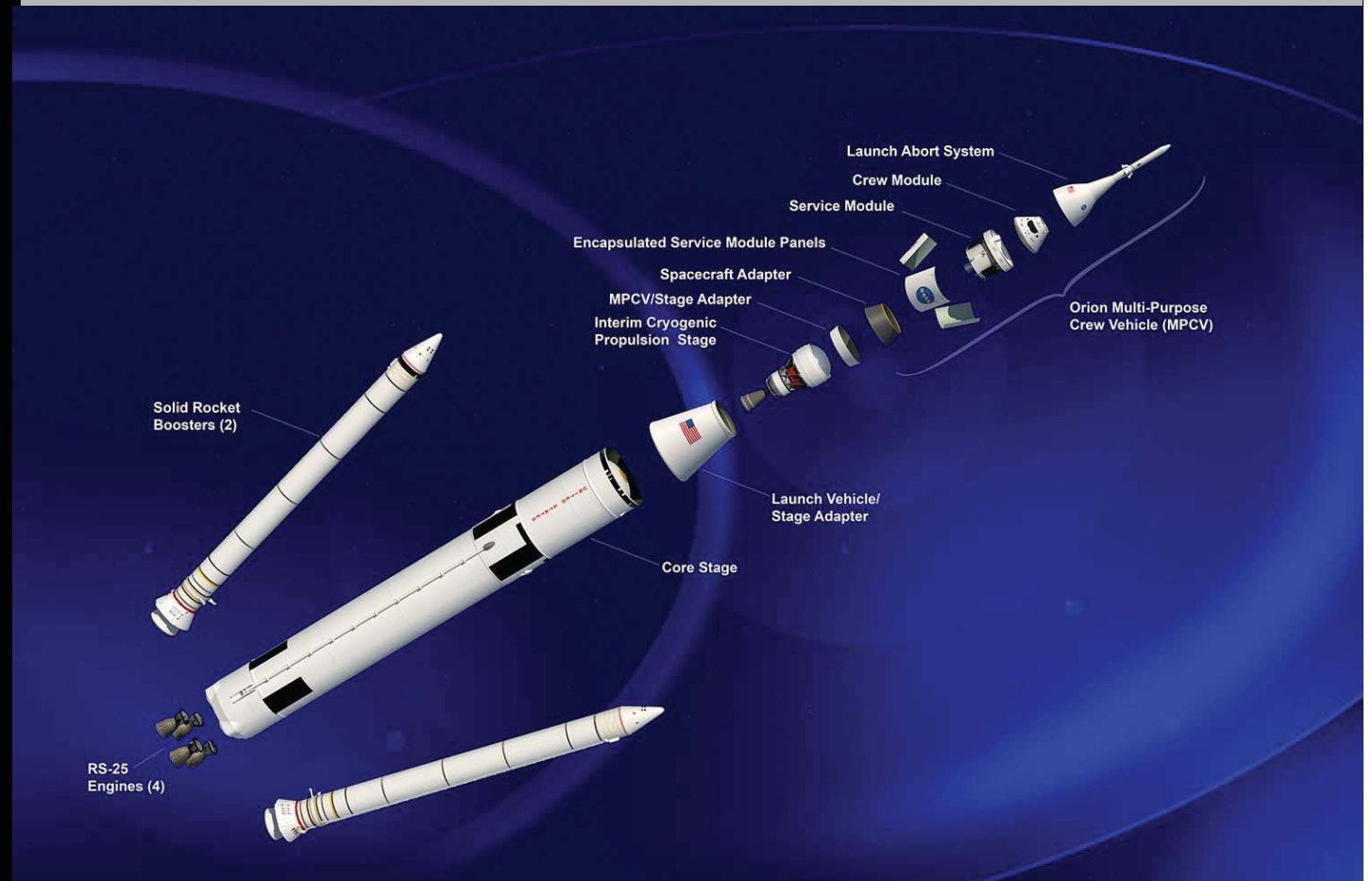
Solid Rocket Boosters:

Built on Space Shuttle hardware; more powerful for a new era of exploration





70 Metric Ton Expanded View

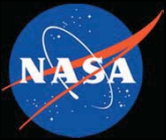




NASA's Space Launch System

Launching Soon.
Building Today.





SLS Nationwide Team

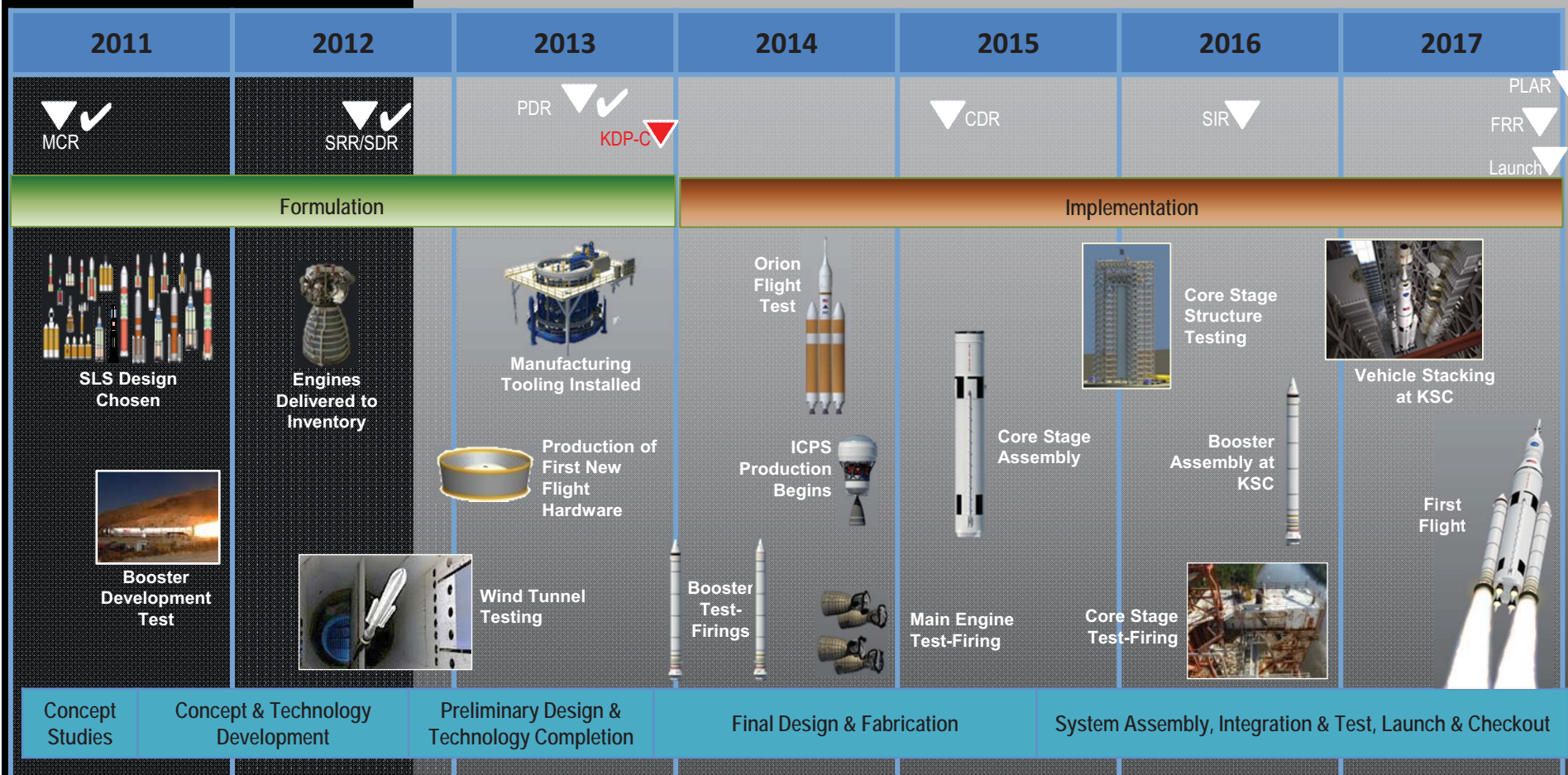


- ◆ Engaging the U.S. Aerospace Industry
- ◆ Strengthening Sectors such as Manufacturing
- ◆ Advancing Technology and Innovation

224 Subcontracts in 30 States



SLS Development Schedule



MCR: Mission Concept Review

CDR: Critical Design Review

SRR: System Requirements Review

SIR: System Integration Review

SDR: System Definition Review

FRR: Flight Readiness Review

PDR: Preliminary Design Review

PLAR: Post-Launch Asses. Review



**'Stack it.
I'm
ready.'
—Tony
Antonelli**



Exceeding Expectations



Engines

Tested selective laser melted part on J-2X at Stennis Space Center (March 2013)



Boosters

Conducted Thrust Vector Flight Control Test at ATK in Promontory, UT (Jan 2013)



Core Stage

Transferred Core Stage test panels to Michoud Assembly Facility (MAF) in New Orleans (Spring 2013)



First Core Stage barrel section welded at MAF (July 2013)



Spacecraft & Payload Integration

Conducted fit-check of the Multi-Purpose Crew Vehicle Stage Adapter at the Marshall Space Flight Center for 2014 Exploration Flight Test (June 2013)



Advanced Development

Conducted F-1 engine hot-fire testing at Marshall (Jan 2013)



Systems Engineering & Integration

Tested buffet model in Langley Research Center's Transonic Dynamics Wind Tunnel (Jan 2013)

On Course for First Flight in 2017



How Your Major/ Career Connects

Auburn University College of Engineering Degrees

- ◆ Aerospace Engineering
- ◆ Biosystems Engineering
- ◆ Chemical Engineering
- ◆ Civil Engineering
- ◆ Environmental Science
- ◆ Computer Science
- ◆ Software Engineering
- ◆ Wireless Engineering
- ◆ Electrical Engineering
- ◆ Industrial and Systems Engineering
- ◆ Mechanical Engineering
- ◆ Materials Engineering (Department of Mechanical Engineering)
- ◆ Polymer and Fiber Engineering



Tim Owen



Todd May (SLS Program Manager)



Chris Crumbly



Jan Davis



Dave Whitten



Your
future
**begins
now.**

www.usajobs.gov

<https://intern.nasa.gov/index.html>

www.nasa.gov/sls #slsinspires



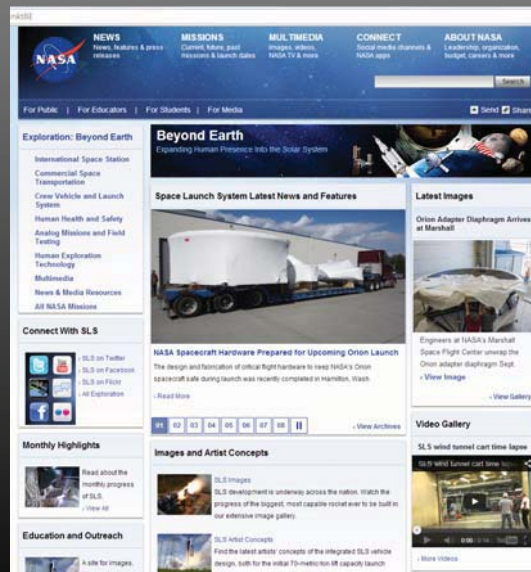
Get a head start on a NASA career



Connect Now



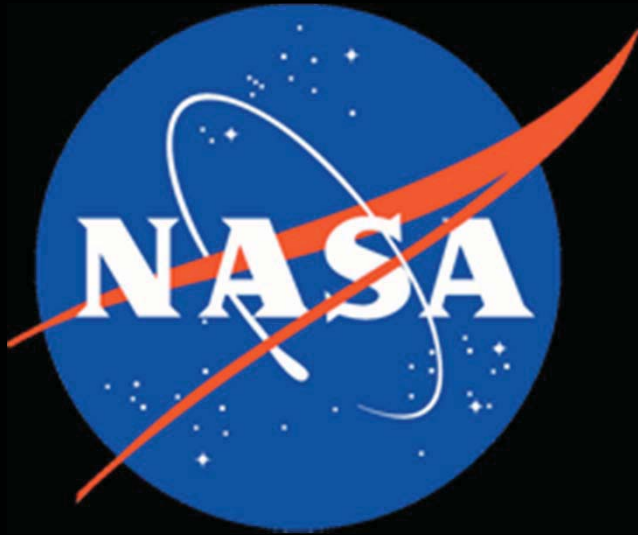
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“Man cannot discover
new oceans
unless he has the
courage to lose
sight of the shore.”

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the journey

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Questions & Answers